



BOSSMATIC® PARAGON



CONTROL VALVES

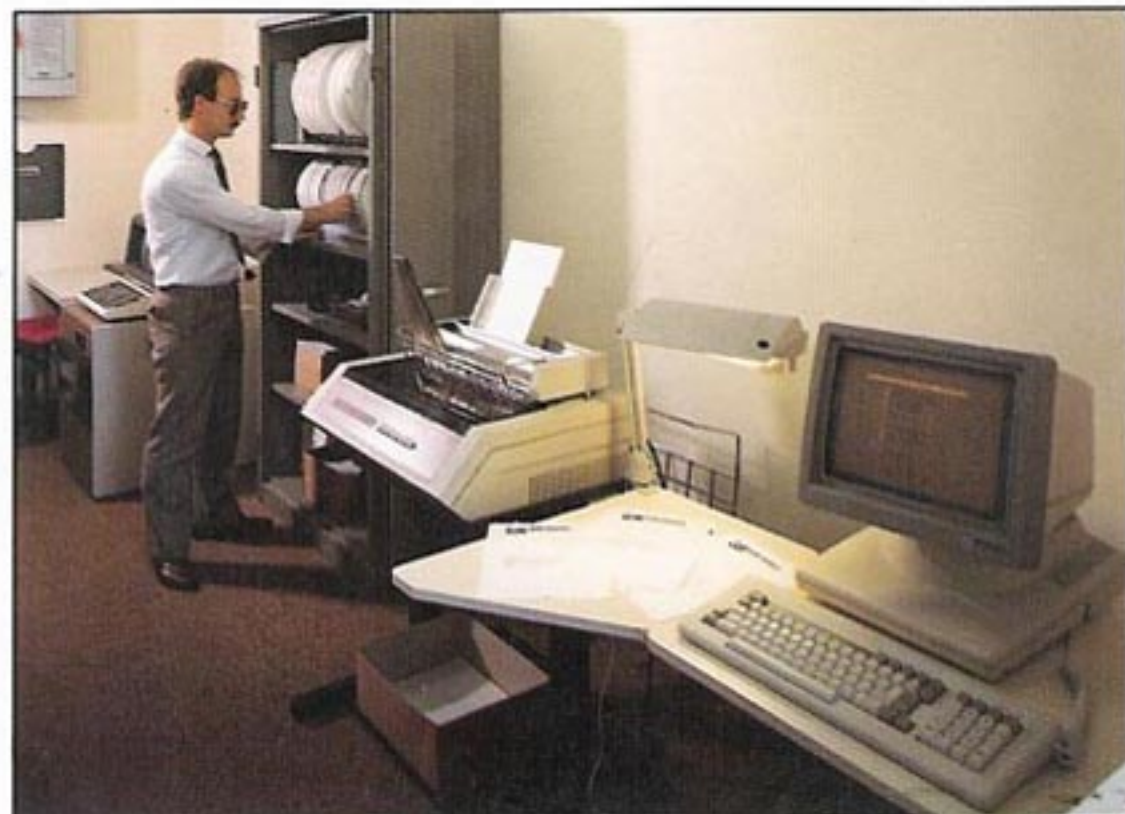
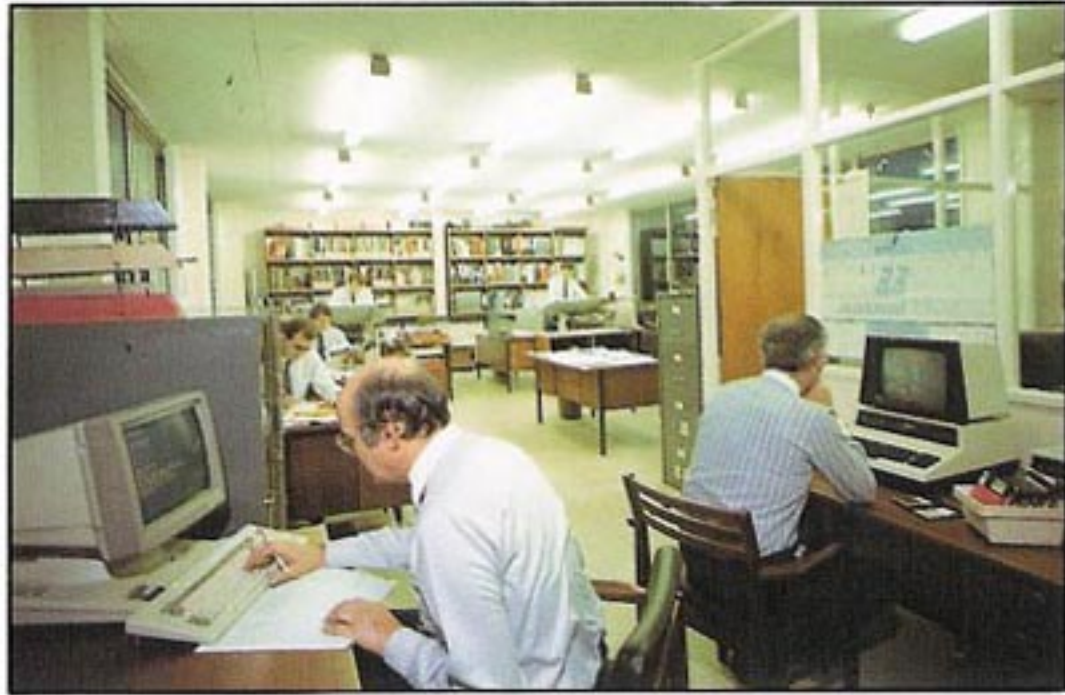
INTRODUCTION

Northvale Korting Limited has been manufacturing and supplying process control valves and fluid handling products since 1968. From its modern well equipped offices and factory in Leicester the company is producing a wide range of quality valves which it sells to both the UK and overseas industrial process markets.

This new catalogue describes the third generation of BOSSMATIC® control valves developed by the company and introduces a radical new concept in control valve design.

DESIGN AND ENGINEERING

Our fully computer aided design department will design and specify valves for a wide range of process applications. Supported by a fluid flow test laboratory Northvale development engineers can quickly carry out live testing on valves up to 200mm to verify performance characteristics, Kv ratings and empirical design conceptions.



PRODUCTION CONTROL

The Company operates a real time fully integrated computer controlled manufacturing system, IMPCON, which maintains total control over all company activities and in particular material supply, stock control and production planning to ensure that we can supply our customers exact requirements quickly and on time.

MANUFACTURING

All machining, fabrication, assembly and testing is controlled at every stage by the IMPCON system. This ensures that materials are available at the right machine and at the right time. A variety of CNC and NC machines ensures component accuracy and repeatability and with 100% final hydraulic testing and inspection your guarantee of satisfaction is assured.



QUALITY ASSURANCE

Northvale Korting operates a QA system approved by LRQA to BS5750 Part 1, ISO 9001 and EN 29002. The company is committed to the pursuit of excellence at all levels of its activity and we welcome and encourage a continual exchange of dialogue and ideas between ourselves, customers and suppliers to ensure that we achieve this objective.



THIS ALL ADDS UP TO –

CUSTOMER SERVICE

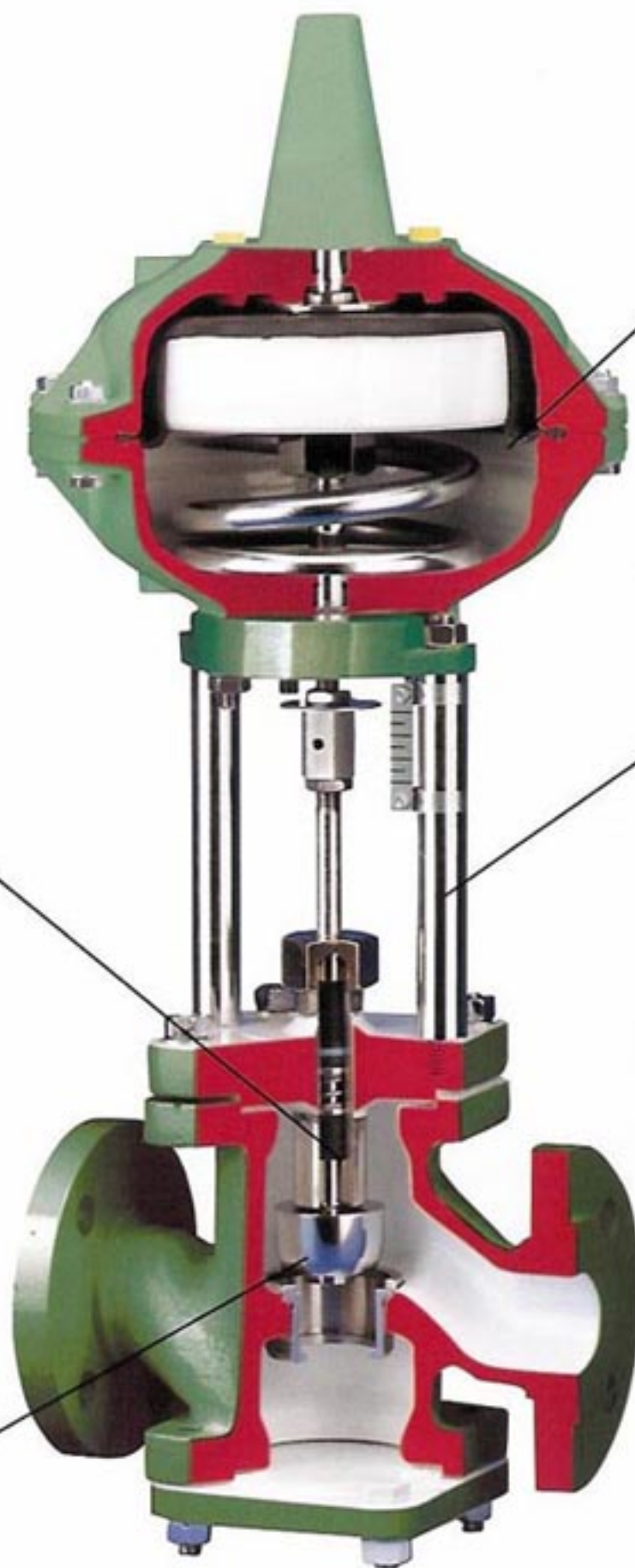
Our sales department is on line to the company's extensive data base and can respond to any customer request quickly and effectively. Valve sizing and selection is fully computerised and customers can be provided with fully documented quotations within minutes of first making contact with the sales engineer.

Field back up and on the spot advice can be given by our team of regional representatives, who cover the whole of the UK. Overseas back up is provided by a network of exclusive distributors in 15 different countries.



BOSSMATIC® 600 SERIES

The 600 series control valves incorporate a number of new design features, whilst at the same time retaining the traditional rugged simplicity of the BOSSMATIC® valve. These new valves are more compact, lighter in weight and with fewer components their maintenance and insitu servicing can be carried out with minimum plant downtime.



ACTUATOR

High thrust rolling style diaphragm actuator, double guided and fully reversible in the field. No dismantling required. Manual override available.

STEM GUIDING

One piece contoured plug and spindle eliminates flow induced vibration with low down stem guiding to minimise valve plug overhang.

YOKE

New lightweight pillar style yoke permits greater flexibility in mounting accessories such as positioners, limit switches, relays, transducers etc.

VALVE TRIM

PARAGON high turn down ratio two stage trim for exceptional control stability throughout the flow range. Other trim styles available with partially or fully stellite plugs, soft seats and V port 3 way valves. PARAGON valve sizes 15 mm through 65mm diameter.

HOW IT WORKS

Conventional globe style control valves have to strike a balance between maximum flow capability at full lift whilst maintaining stable control of low flow rates at the bottom end of the range. Achieving a high turndown ratio usually results in the control plug having to operate very close to the valve seat, which leads to wire drawing and rapid erosion wear of the trim.

To maintain set point control at these small openings requires very small valve stem movements which the actuator may not be able to match. The valve begins to "hunt" and the whole control feed back loop becomes unstable.

PARAGON TRIM

Northvale's new control valve with the unique PARAGON high turndown ratio trim significantly improves the control characteristic at the bottom end of the flow range. This increases the valve's flexibility and reduces the number of trims required for each line size of valve. These improvements are achieved by the dual action PARAGON trim with its specially profiled plug and two stage compound seat.

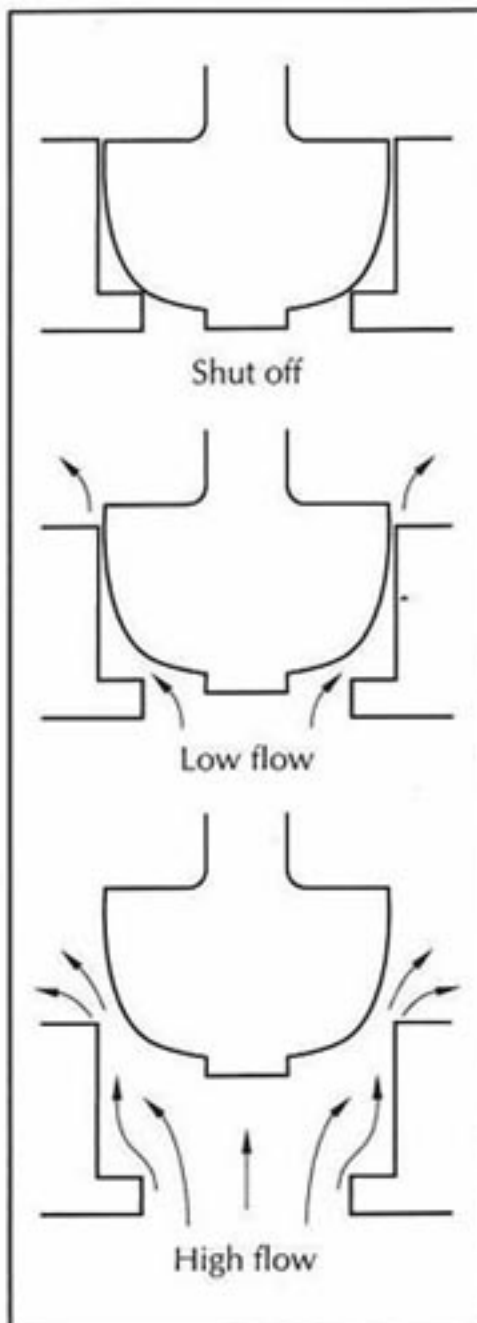


Fig 1

Fig 1 CLOSED VALVE

Valve shut off is achieved on the lower seat. The upper controlling seat is not in contact with the plug.

Fig 2

Fig 2 LOW FLOWS

Fluid entering the valve under the plug passes over the bottom seat and expands into the seat cavity before being throttled through the control annulus around the top seat. Pressure drop is taken across each seat which ensures a smooth transition between upstream and downstream conditions.

This two stage feature allows the valve plug to lift well away from the bottom (closing) seat whilst remaining in close proximity to the upper controlling seat.

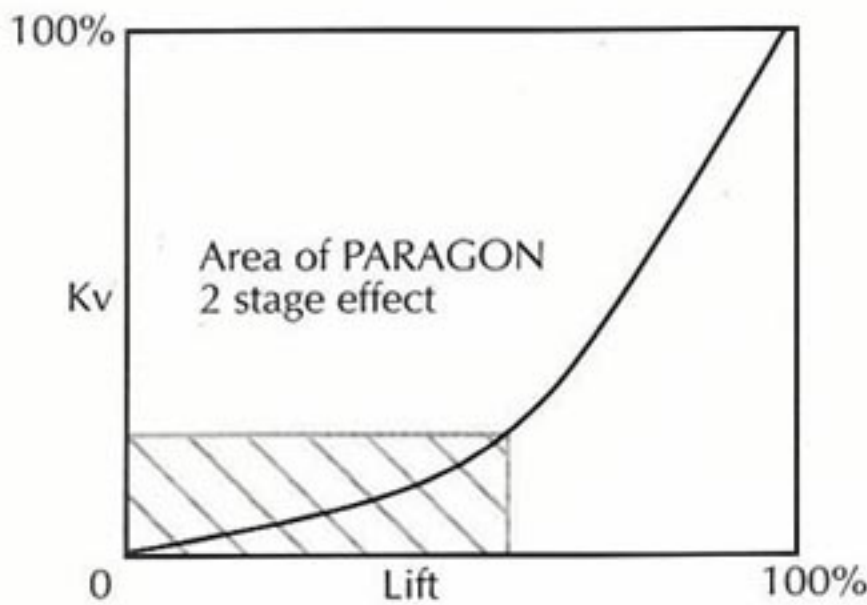
Fig 3

Fig 3 NORMAL FLOW

Beyond 50% valve lift the PARAGON trim begins to act like a conventional profiled plug valve with control being exercised solely by the top seat.

CONTROL CHARACTERISTICS

The control characteristics of the PARAGON trim are explained on Page 4 but a more visual representation is shown in the graph where the relationship between valve plug lift and flow capacity can be derived.



The basic characteristic is equal percentage but the PARAGON trim greatly extends the control capability at valve plug lifts up to 50% of full travel. See shaded area.

Table 1. Kv Values.

VALVE SIZE (mm)	Flow capacity Kv								
	15	20	25	40	50	65	80	100	150
Trim A	3.5	6.4	10.0	24.0	34.0	62.0	100	160	330
Trim B	1.5	1.5	6.4	6.4	10.0	24.0	62	100	160
Trim C			1.5	1.5	6.4	10.0	38	62	100

Table 2a Differential Pressures, Flow-to-open, Spring-to-close (AFC)

VALVE SIZE (mm)	Valve shut-off Capability (Barg)								
	15	20	25	40	50	65	80	100	150
125 Actuator (2 Barg)	48	32	21	8	-	-	-	-	-
250 Actuator (3 Barg)	-	-	48	20	15	6	-	-	-
500 Actuator (3.5 Barg)	-	-	-	-	-	18	12.0	7.5	3.0

Pressures in brackets refer to min. air supply required to operate the actuator.

Table 2b. Differential Pressures, Flow-to-open, Spring-to-open (AFO)

VALVE SIZE (mm)	Valve shut-off Capability (Barg)								
	15	20	25	40	50	65	80	100	150
STD. ACTUATOR	125 cm ²			250 cm ²			500 cm ²		
Actuator Supply									
3 Bar AIR	48	27	18	-	-	-	-	-	-
4 Bar AIR	48	48	40	18	11	6.8	5.1	3.1	1.2
5 Bar AIR	48	48	48	36	22	13.5	14.5	9.2	3.9
6 Bar AIR	48	48	48	48	33	20.3	24.0	15.2	6.7

Table 2c. Differential Pressures, Flow-to-close, Spring-to-close (AFC)

VALVE SIZE (mm)	Valve shut-off Capability (Barg)		
	80	100	150
STD. ACTUATOR	500 cm ²		
Actuator Supply			
4 Bar AIR	5.7	3.3	1.2
5 Bar AIR	16.2	9.8	4.1
6 Bar AIR	26.6	16.2	6.8

N.B. All differential pressures are maximum values for ANSI Class 300 and will need to be derated for other body ratings.

For further information about optional trim sizes, actuator combinations and spring rates please consult our Technical Sales Department.

DATA SHEETS

BODY MATERIAL

Cast iron – BS 1452-GR 250
 Cast steel – BS 1504-161-GR 480A
 Stainless steel – BS 1504-316C16

TRIM MATERIAL: Stainless steel, stellite and PTFE.

FLANGES: PN16/25/40. (ANSI 125/250, 150/300)

MAX AMBIENT TEMPERATURE: 90° C.

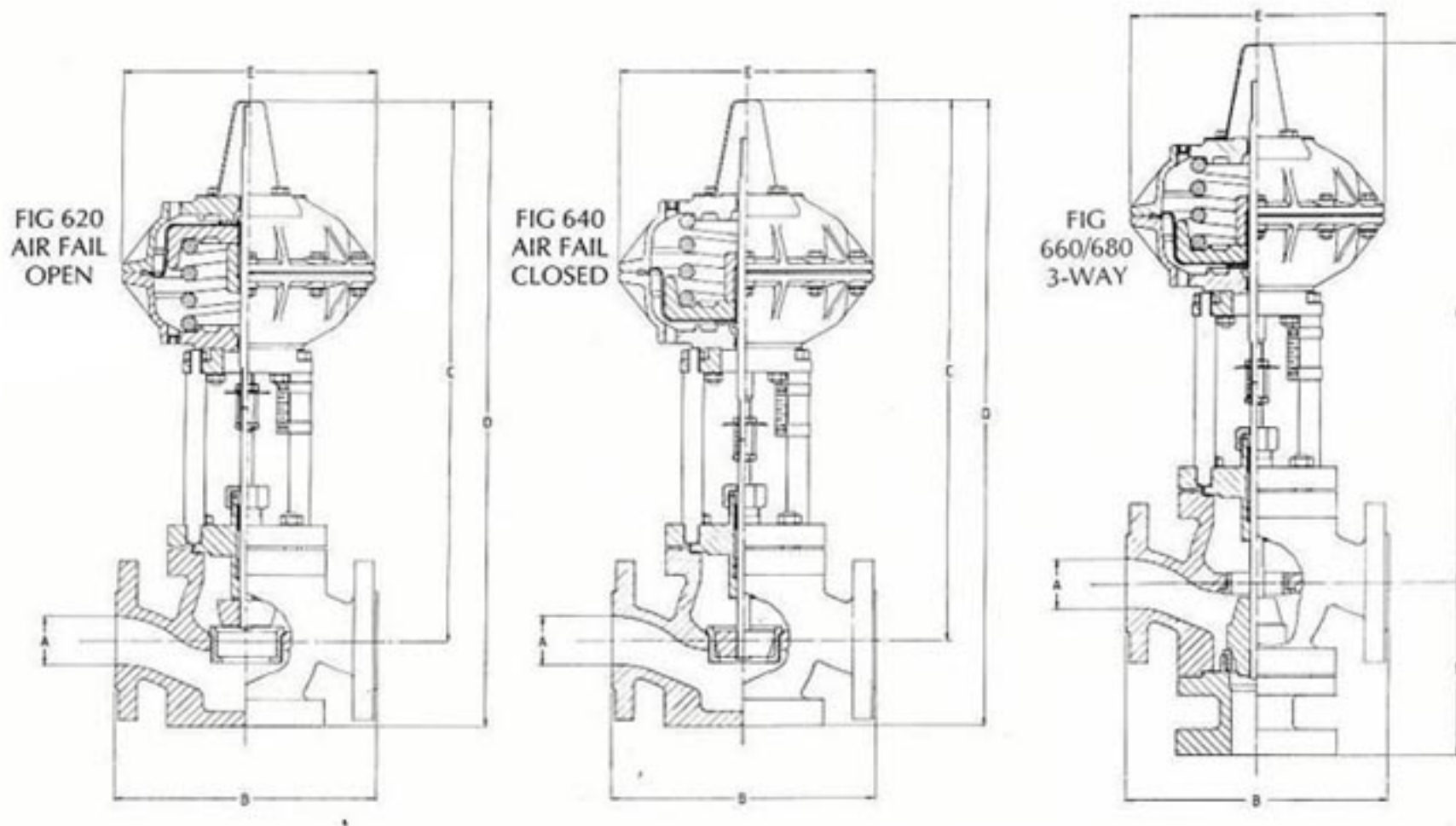
MAX SERVICE TEMPERATURE: According to body material and flange rating.

MAX DIRECT AIR SUPPLY: 6 bar.

SEAT TIGHTNESS: Metal to metal seats conform to ANSI B16 104 Class 4 shut off. Soft inserts conform to ANSI B16 104 Class 5 shut off.

ACCESSORIES: Valve Positioner. E/P Converter. 3-way Solenoid Valve. Soft Seat. Hand Jack. Air Filter Regulator. Temperature, Pressure and Level Controllers. End of Travel Limit Switches, Bellows Seal.

ELECTRIC ACTUATORS: Details available on request.

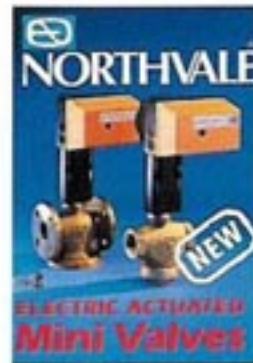
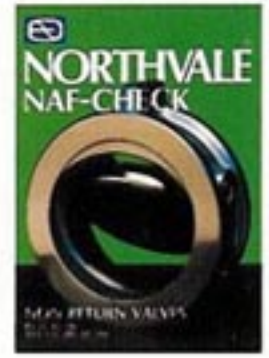
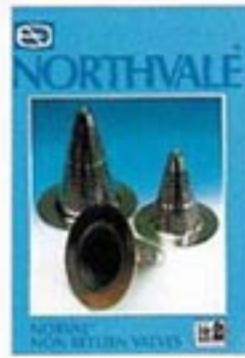
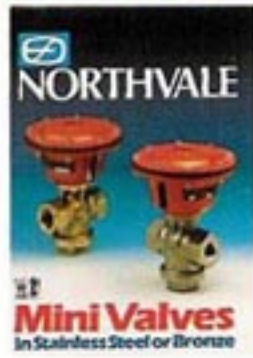


A Size mm	Actuator Size sqcm	B	C	D	E	F	Weight Kg	
							2-way	3-way
15 (½")	125	197	515	575	200	150	20	22
20 (¾")	125	197	515	575	200	150	20	22
25 (1")	125	197	515	590	200	150	20	22
40 (1½")	250	235	555	640	257	177	32	35
50 (2")	250	267	555	640	257	177	34	40
65 (2½")	250	292	555	651	257	182	44	50
80 (3")	500	317	849	956	334	220	85	95
100 (4")	500	368	864	995	334	235	90	102
150 (6")	500	473	938	1042	334	310	150	165

Northvale Korting is dedicated to the continual product development; and as such reserves the right to change dimensional data without prior notice.



THE FOLLOWING CATALOGUES ARE AVAILABLE ON REQUEST



For more information contact our Sales Department in Leicester.

Telephone: 0116 2665911 (6 lines)
 Fax: 0116 2610050



NORTHVALE KORTING LTD

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